

CLAIMS

The invention claimed is:

1. A vehicular vision system, comprising:
an image sensor comprising an array of pixel sensors and an image plane; and
a first lens and a second lens, said first lens being configured to project light rays onto a first portion of said image plane and said second lens being configured to project light rays onto a second portion of said image plane, wherein a red spectral filter is located between said first portion of said image plane and a scene to be imaged.
2. A vehicular vision system as in claim 1 wherein each of said lenses is shaped such that the focal length of each lens at the spectral frequency pass of said lens is the same as the focal length of the other lens.
3. A vehicular vision system as in claim 1 further comprising a means to distinguish red light rays from white light rays.
4. A vehicular vision system as in claim 1 further comprising a means to detect a blue sky.
5. A vehicular vision system as in claim 1 further comprising a housing having an opening, wherein said opening is configured to limit a field of view of said image sensor.
6. A vehicular vision system as in claim 1 further comprising a controller configured to generate an exterior light control signal as a function of at least one image.
7. A vehicular vision system, comprising:
an image sensor comprising an array of pixel sensors and an image plane; and
a means for distinguishing a blue sky from a cloudy sky.

8. A vehicular vision system as in claim 5 further comprising a lower threshold point to turn on and, or, off a vehicle light for a blue sky than for a cloudy sky.
9. A vehicular vision system as in claim 6, said means for distinguishing a blue sky from a cloudy sky comprising at least one lens configured to project at least a portion of a scene of the sky onto said image sensor such that a portion of associated light rays pass through a spectral filter.
10. A vehicular vision system as in claim 7 further comprising a housing having an opening, wherein said opening is configured to limit a field of view of said image sensor.
11. A vehicular vision system as in claim 7 further comprising a controller configured to generate an exterior light control signal as a function of at least one image.
12. A vehicular vision system, comprising:
 - an image sensor comprising an array of pixel sensors;
 - at least one lens for gathering light rays from a region substantially in front of the vehicle and focusing the gathered light rays on said image sensor; and
 - a housing in which said at least one lens and said image sensor are housed, said housing having an opening positioned several focal lengths in front of said at least one lens for limiting the field of view of said image sensor.
13. A vehicular vision system as in claim 12 wherein an optical axis of said at least one lens passes through said opening.
14. A vehicular vision system as in claim 12 further comprising a controller configured to generate an exterior light control signal as a function of at least one image.
15. A vehicular vision system as in claim 12 where said at least one lens has a focal length of approximately 4 mm.

16. A vehicular vision system as in claim 12 wherein said at least one lens includes more than two lenses each for gathering light rays from a region substantially in front of the vehicle and focusing the gathered light rays on said image sensor, each of said lenses being associated with a different spectral band.

17. A vehicular vision system as in claim 12 wherein said at least one lens includes a first lens and a second lens, said system further comprising a baffle extending along a line from a position between first and second regions of said image sensor to a position between said first and second lenses so as to block light transmitted through said first lens from impinging upon the second region of said image sensor.

18. A vehicular vision system as in claim 12 wherein said at least one lens images a scene in front of the vehicle within a field of view of about 22° wide by about 9° high onto said image sensor.

19. A vehicular vision system as in claim 12 further comprising a shutter between the image sensor and the imaged scene, said shutter operative to attenuate the intensity of light from the scene, and wherein a control circuit controls the shutter attenuation of light based on detected light levels.

20. A vehicular vision system, comprising:
a housing defining an opening;
an image sensor positioned in said housing spaced from said opening to view a scene through said opening; and
at least one lens positioned in said housing, said at least one lens is operative to focus light rays from a scene viewed through said opening onto said image sensor, wherein a field of view of said image sensor is limited by said opening and an axis normal to an image plane of said image sensor passes through said opening.

21. A vehicular vision system as in claim 20 further comprising a controller configured to generate an exterior light control signal as a function of at least one image.